

REMARKS

Claims 1-3 and 5-12 are all the claims pending in the application.

I. Claim Rejection under 35 U.S.C. §103

Claims 1-3 and 5-12 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Uemura (US 6,331,450 B1).

Applicants respectfully traverse the above rejection.

In the Amendment filed December 16, 2008, Applicants pointed out that (1) Uemura does not disclose or teach a transparent positive electrode having a bonding pad layer on the current diffusing layer; and (2) Uemura does not disclose the claimed thickness range of the contact metal layer is from 0.1 to 7.5 nm.

Further, Uemura discloses in Fig. 1 and Fig. 4 two separate and independent embodiments, and therefore, one of ordinary skill in the art would not consider forming the bonding pad layer 320 of Fig. 4A on the current diffusing layer 112 of Fig. 1.

In response, the Examiner stated that “the instant claims are not related to any package term or how does the device work.” The Examiner contends that the structures of Uemura’s two embodiments (of Fig. 1 and Fig. 4A) are similar based on how they emit light or function. The Examiner takes the position that since Uemura discloses a bonding pad layer 320 on the current diffusing layer 312 in the embodiment of Fig. 4A, Uemura also discloses a bonding pad layer 320 on the current diffusing layer 112, 312 in Figs. 1 and Fig. 4A, respectively. Applicants respectfully disagree. The Examiner’s reliance on disparate embodiments cannot support the rejection.

Specifically, Uemura discloses in Fig. 1 and Fig. 4A two separate and independent embodiments. There is no teaching or suggestion within Uemura for modifying and combining

the disparate embodiments disclosed in Fig. 1 and Fig. 4A, to form a bonding pad layer 320 of Fig. 4A on the current diffusing layer 112 of Fig. 1.

Uemura discloses a bonding pad layer 320 on a current diffusing layer 312 in Fig. 4A. However, the wire-bonding light-emitting device as shown in Fig. 4A of Uemura also fails to disclose or suggest the claimed invention, because this embodiment of Uemura does not have a contact metal layer (of Pt) in contact with a p-type semiconductor layer, as required in claim 1. In Fig. 4A of Uemura, the layer 311, which is in contact with the P-contact layer 309, is made of cobalt.

Further, on page 5 of the Action, at the second paragraph, the Examiner asserted that “Applicants argued that the reference shows “the flip-chip device is mounted on a lead frame”, but the claim 1 does not recite this feature.” The Examiner reasoned that “Applicants show certain features in the claims of applicant's invention, it is noted that the features upon which applicant relies (i.e., the flip-chip device is mounted on a lead-frame) are not recited in the rejected claim(s).” Applicants again respectfully disagree with the Examiner’s characterization.

In particular, as pointed out in the Amendment of December 16, 2008 that there is no teaching or suggestion within Uemura for modifying and combining the disparate embodiments disclosed in Fig. 1 (flip-chip-type device - first embodiment) and Fig. 4 (wire-bonding-type device - third embodiment) in the manner suggested by the Examiner, or otherwise. Applicants further pointed out that if the bonding pad layer 320 of Fig. 4A were to be formed on the current diffusing layer 112 of Fig. 1, when the flip-chip device is mounted on a lead-frame, soldering to the small projecting bonding pad must be carried out such that working performance and yield

would decrease. Thus, one of ordinary skill in the art would not consider forming the bonding pad layer 320 of Fig. 4A on the current diffusing layer 112 of Fig. 1.

The above-noted argument was made to explain why the disparate embodiments disclosed in Fig. 1 and Fig. 4A of Uemura can not be combined, and not to point out a distinguishing feature of the claimed subject matter. The Examiner's assertion that the present claims do not recite "the flip-chip device is mounted on a lead frame" is irrelevant. Reconsideration is requested.

Further, in response to Applicants' argument that Uemura does not disclose the claimed thickness range of the contact metal layer, the Examiner merely reiterated his position that that Uemura discloses that the contact metal layer (the first metal layer 111, Fig. 1) has thickness of about 0.3 μm (col. 5, lines 10-13). The Examiner asserted that it would have been obvious to use any suitable thickness for the device. Applicants disagree.

In particular, as discussed in the Amendment filed July 12, 2006, relative to claim 1, reducing the thickness of the contact metal layer as suggested by the Examiner would render the device of Uemura unsatisfactory for its intended purpose. Namely, because the thickness of first metal layer 111 in Uemura is very thick, i.e., 0.3 μm (300 nm), it cannot transmit light. As shown in Fig. 1 of Uemura, light is reflected at the interface between p-type semiconductor layer 106 and contact metal layer 111. Further, Uemura teaches away from modifying the device described therein in the manner suggested by the Examiner. In reference to the instant specification at page 6, third paragraph, Applicants pointed out that if the thickness of the contact metal layer is less than 0.1 nm, a stabilized thin film can hardly be obtained, whereas if it exceeds 7.5 nm, the transparency decreases.

The Examiner has not indicated any reasons in the present Office Action regarding why the above-noted differences are not indicative of patentability, and reconsideration is respectfully requested.

In view of the above, it is respectfully submitted that the present claims are patentable over Uemura, and withdrawal of the foregoing rejection under 35 U.S.C. §103(a) is respectfully requested.

II. Additional Comments

Applicants noted that on page 2 of the present Office Action, the Examiner stated that Uemura discloses a transparent positive electrode 113. In this regard, Applicants believe that the Examiner intended to refer to 120 (instead of 113) as the positive electrode. Col. 5, lines 1-5 of Uemura.

However, as shown in Fig. 1 of Uemura, light is reflected on the interface of the first metal layer 111 and the p-layer 106, therefore, electrode 120 of Uemura is not a transparent electrode. Therefore, the Examiner's reasoning for rejection appears to be based on a misunderstanding. Confirmation and clarification is respectfully requested.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: June 16, 2009